Generation and in vitro profiling of neural stem cell lines to predict in vivo efficacy for chronic cervical spinal cord injury.

Grant Award Details

Generation and in vitro profiling of neural stem cell lines to predict in vivo efficacy for chronic cervical spinal cord injury.

Grant Type: Quest - Discovery Stage Research Projects

Grant Number: DISC2-10753

Investigator:

Name:	Aileen Anderson
Institution:	University of California, Irvine
Type:	PI

Disease Focus: Spinal Cord Injury, Neurological Disorders

Award Value: $1,575,613

Status: Pre-Active

Grant Application Details

Application Title: Generation and in vitro profiling of neural stem cell lines to predict in vivo efficacy for chronic cervical spinal cord injury.

Public Abstract:

Research Objective

This project generates new cGMP compliant tissue educated human neural stem cell lines, paired with in vivo pre-clinical proof of concept testing, and development of a predictive in vitro profile.

Impact

Identification of new cell lines with in vivo efficacy testing to enable efficient translation to chronic cervical spinal cord injury, an area of significant unmet medical need.

Major Proposed Activities

- Derivation of new human neural stem cell lines
- In vitro characterization of human neural stem cell lines
- Construction of an in vitro cell line profile that can discriminate in vivo efficacy potential
- In vivo analysis of human neural stem cell line efficacy after transplantation into spinal cord injured mice

Statement of Benefit to California:	The impact of this research includes generation of new CD133-enriched tissue-educated cGMP compliant human neural stem cell lines, which have demonstrated capacity for translation into the clinical for multiple neurological disorders, and development of a profile that can relate in vitro expression analyses from these cells under growth and differentiation conditions to in vivo efficacy. Both of these are critical steps for effective translation.

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